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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/765,217

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Joris Jan Van Der Sande

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03/23/2007

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EXAMINER

RAYMOND, BRITTANY L

ART UNIT

PAPER NUMBER

1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/765,217

Applicant(s)

VAN DER SANDE, JORIS JAN

Examiner

Brittany Raymond

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 12-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/2/2004/6/29/2006.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-11 in the reply filed on 1/25/2007 is acknowledged. The traversal is on the ground(s) that no serious burden exists to search and examine the entire application, claims 12-28 describe a process and apparatus similar to the method of claims 1-11, and that the entire application has already been searched and examined. This is not found persuasive because the field of search for Group I, claims 1-11, is not co-extensive with the search for Group II, claims 12-28, and would result in a serious burden on the examiner to search and examine both groups. The restriction is compliant with MPEP 811 in that the examiner made the restriction requirement in the first action on the merits.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 12-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/25/2007.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 6-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

Art Unit: 1756

was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no explanation as to what a "gap-crossing-move" is, in claims 6-11. The only explanation is a series of conditions that need to be met in order to detect a "gap-crossing move".

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan (U.S. Patent 6320345) in view of Curey (U.S. Patent Application 2003/0014211).

Yuan discloses a method for driving a stage with a trajectory command to minimize discontinuities in the motion of the structure (Column 2, Lines 5-9). Yuan also discloses that an optical system projects patterns formed on a mask onto a substrate stage in order to expose and pattern the substrate (Column 3, Lines 28-32), as recited in claims 1 and 3 of the present invention. Yuan states that the substrate stage is driven in an X, Y, and Z coordinate direction (Columns 3 and 4, Lines 67-1) and is done so in a way to minimize the positional deviation between the mask and substrate (Column 3, Lines 55-57). Yuan also states that velocity, acceleration and jerk are used to determine the trajectory and each have limitations at certain times of the process (Column 5, Lines 22-60), as recited in claim 1 of the present invention. Yuan discloses

Art Unit: 1756

that the values of acceleration are equal to zero at the start and finish of the acceleration (Column 2, Lines 14-16), which can be considered a first and second state, as recited in claim 2 of the present invention.

Yuan fails to disclose the mathematical equations and sub-steps used to calculate the trajectories along with the use of orientation and its derivatives.

Curey discloses a method for generating motion and trajectory data for a rotating platform which uses values of angular rate, angular acceleration, and angular jerk, as well as a set of motion equations (Paragraph 0018). Although Curey does not explicitly disclose the equations of claim 5 of the present invention, they are inherent because each is a form of a standard equation of motion. Curey also discloses several equations throughout the reference that are examples of equations of motion. Curey states that when normal operating conditions, those that are used to achieve maximum values of acceleration, deceleration and rate, are not met then the transition times are recalculated and the actual maxima achieved are substituted into the predetermined set of equations (Paragraph 0026), which is similar to the steps of claim 4 of the present invention.

It would have been obvious to one of ordinary skill in this art to have used the equations and angular derivatives, as suggested by Curey, in the process of Yuan because Curey teaches that equations of motion are required in order to calculate trajectories for any apparatus and that angular derivatives are needed to calculate rotational movements by the apparatus.

***Allowable Subject Matter***

7. Claims 6-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

9. The following is an examiner's statement of reasons for allowance: Claims 6-11 are allowable over the prior art of record because Claims 6-11 recite a method for detecting a gap crossing move and provide several equations and steps to follow after detection of a gap crossing move and Yuan does not teach or suggest these steps or equations. The secondary reference to Curey does not correct for the deficiencies in Yuan.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brittany Raymond whose telephone number is 571-272-6545. The examiner can normally be reached on Monday through Friday, 8:00 a.m. - 4:30 p.m. EST.

Art Unit: 1756

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KATHLEEN DUDA  
PRIMARY EXAMINER